

Appln. of: KOZLOWSKI, Joachim
Serial No.: 09/830,649
Filed: April 30, 2001

REMARKS

Reconsideration and allowance are respectfully requested.

Claims 1, 2 and 5-29 are pending.

Claims 1-2, 5-6, 16 and 25 stand rejected under 35 USC § 103 as being unpatentable over Stauber in view of Foreign Patent No. DE4110039.

In order to recognize what the known art means it must be clearly distinguished between several types of machine knives. A comprehensive introduction into prior art is given by page 1 of the application, especially by the following paragraph:

Such knives can be used several times, because they can be reground repeatedly. In the process they become shortened and must be freshly balanced each time. Special demands in regard to quality, accuracy, etc. must be made on the regrounding and balancing, so that thereafter the process parameters, which are important for achieving the desired quality and efficiency, remain assured.

An improved knife according to the present invention is described at the end of page 1 as follows:

As will be noted, the machine knife in accordance with the invention is essentially comprised of two elements, namely a knife support and a blade holder with the blade or cutter, which can be attached to it and released from it again. The blade or cutter is permanently connected with the blade holder.

Thus the claimed invention deals with two elements having three components, i.e.

1. a blade (cutter)
2. a blade holder
3. a knife support

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The components are combined to each other in claim 1 as follows:

a) The blade is combined with the "blade holder to form an inseparable component", i.e., the blade is permanently connected with the blade holder.

b) The "blade holder [with the blade] is releasably attached to the knife support" i.e., the blade holder can be attached to the knife support and released from it again.

As has been explained before, the known knives which can be reground repeatedly become shortened and must be freshly balanced each time. This is easily described but difficult in operation. One way to overcome the disadvantages of regrinding is to avoid regrinding and to use always fresh blades. That, however, would be very expensive since most of the expensive material of which the blades are made would be thrown away unused. Therefore, such a possibility has not been taken into consideration and has not been proposed by the present invention.

As can clearly be seen, however, a modification of the blade has been proposed, i.e. a solid unit of a comparatively small blade and a comparatively big blade holder. For such units, only a small amount of special quality material for blades is needed so that it is justified to abandon such units as soon as the blade ceases to cut accurately. However, it is not easy to secure such a small blade to a blade holder, especially when it is considered that all of the cutting forces must be transmitted through the small blade. The greater the forces for trimming are, the

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more critical is the blade's connection to the blade holder. Likewise, the smaller the blade is, the more critical its connection to the blade holder.

The claimed invention sets forth a machine knife for securing a blade to a blade holder and attaching the blade holder to a knife support. Keeping such circumstances in mind, it is apparent that no citation can make the present invention obvious that ignores the problem of permanently connecting a small but highly loaded blade with a blade holder.

It is correct that Stauber does not show boundary faces extending at angle of $< 90^\circ$ with respect to each other. Moreover it must be emphasized that Stauber discloses first of all a special apparatus for trimming flat multi-sheet printed products, wherein blades and counter blades are collaborating. Contrary to that, the invention of claim 1 proposes a machine knife that doesn't need a counter blade. The new machine knife is already operable in connection with a simple rail. The claimed machine knife can be put in operation without pre-conditions as must be accomplished for instance for the Stauber device. Further, it must be emphasized that in Stauber, the collaboration of two knives means that the load on each knife is less than the load on the machine knife according to the claimed invention, which knife must do such work alone.

Foreign patent no. DE 4110039 deals with a completely different solution. First, this reference only shows a simple knife consisting of a knife support and a solid blade which is secured directly to the knife support. Moreover the use of boundary faces 7 (extending at angle of $< 90^\circ$ with respect to each other) is not at all taught for the purpose of increasing the useful life of a bit. And in no case does it disclose or suggest permanently connecting a blade with a blade holder.

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As can clearly be seen, that reference is dealing with a solid blade 3 that includes two cutting edges 4, 5 which can be put in operation one after another. That means that the boundary faces are forming nothing else than a special kind of case or cover for the cutting edge which is not in operation. It is also a preferred embodiment according to claim 5 of the citation that the cutting edge not in operation is arranged without contact to the boundary faces within the free space 8 (Freiraum 8 = free space 8). That clearly concerns a fresh cutting edge. For as soon as a cutting edge has been used up it will be shortened and remain without contact already by such circumstance. Moreover it is also described and recommended that a blade is reground repeatedly when its cutting edges are no longer sharp. See column 1, lines 39-42.

The German wording is as follows:

Sind beide Schneiden stumpf, so wird die Klinge durch eine neue, gleich ausgebildete Klinge ersetzt, wobei die Klinge mit den stumpfen Schneiden wieder geschärft werden kann.

It can be translated into English as follows:

When both cutting edges are no longer sharp, the blade is replaced by a new equally formed blade, in doing so it will be possible to regrind the cutting edges of the blade which are no longer sharp.

Therefore, Foreign patent no. DE 4110039 does not teach or suggest the use of boundary faces 7 extending at angle of $< 90^\circ$ for the purpose of strengthening the assembly and increasing the useful life of the bit. That reference ignores completely a construction according to claim 1,

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i.e. a construction comprising three different components (knife support, blade holder and blade) and it ignores moreover, permanently connecting a small but highly loaded blade with a blade holder. That citation only teaches a protection of a cutting edge – and finally leads back to an art wherein blades are reground repeatedly with all the disadvantages that the claimed invention is able to overcome.

In the claimed invention the cutout (the boundary faces) doesn't correspond to the cutting edge nor is it influenced by the form, angle or other feature of the cutting edge. The proposed angle of $< 90^\circ$ is an independent feature by which the permanent connection between blade and blade holder is supported. Thusly, the loads of the blade can be transmitted to the blade holder in a more favorable manner, i.e. supported by the engaging form (with respect to each other).

In view of the above, neither Stauber nor DE4110039, alone or in combination, teach or suggest the invention of claim 1 and it is respectfully requested that this rejection be withdrawn.

Claims 11 and 20 are rejected under 35 USC § 103(a) as being unpatentable over Stauber in view of Foreign Patent No. DE4110039 as applied to claims 1 and 6 above, and further in view of Beadman (5,605,087).

Claims 12, 21, 26 and 27 stand rejected under 35 USC § 103(a) as being unpatentable over Stauber in view of Foreign Patent No. DE4110039 as applied to claim 1 above, and further in view of Kutchmarek et al. (6,435,066).

Claims 13 and 22 are rejected under 35 USC § 103(a) as being unpatentable over Stauber in view of Foreign Patent No. DE4110039 as applied to claim 1 above, and further in view of Houser.

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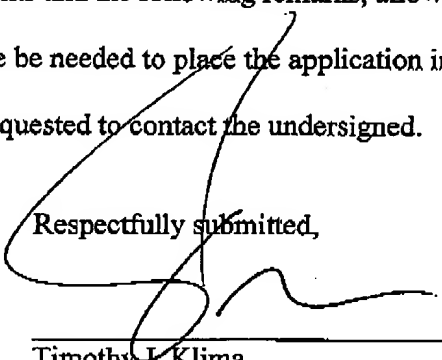
Claims 14-15 and 23-24 are rejected under 35 USC § 103(a) as being unpatentable over Stauber in view of Foreign Patent No. DE4110039 as applied to claim 1 above, and further in view of Curtsinger et al. (5,896,800).

Claims 15, 24 and 28-29 are rejected under 35 USC § 103(a) as being unpatentable over Stauber in view of Foreign Patent No. DE4110039 as applied to claim 1 above, and further in view of Plein (5,791,225).

The remaining claims all depend from claim 1 and are believed allowable for the same reasons as given with respect to claim 1. Therefore, it is respectfully requested that these remaining rejections be withdrawn as well.

In view of the foregoing amendments and the following remarks, allowance of this case is earnestly solicited. Should anything else be needed to place the application in condition for allowance, the Examiner is respectfully requested to contact the undersigned.

Respectfully submitted,



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